

**UNIVERSITI TEKNOLOGI MARA**

**DISTANCE EFFECTS ON 802.11G/N PERFORMANCE  
OF DIFFERENCE TRANSMIT POWER**

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## ABSTRACT

This paper describes the concepts and methodology of the 802.11g and 802.11n wireless networking standards by using different powers in different distances of transmission. This paper investigates the mobile client to server network performance by using Windows 7 as the operating system for mobile client while FreeBSD functions as the server. The evaluation has looked into the impact on TCP while operating in different transmission powers at different distances. The results show that the 213mW transmit power gave the highest throughput with the best time in transferring 100MB file for both 802.11n and 802.11g. However, the 802.11n protocol has higher throughput compared to the 802.11g in every scenarios.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Overview

In the field of telecommunications, wireless network is one of the modern creations which uses radio waves to develop communication channels between smart devices such as computers, tablets and others. Wireless networking functions as connector between networking and network devices. One of the advantages of wireless networking compared to wired network is it requires no cables and has greater mobility.

However, the drawback of wireless network is the occurrence of interference due to other wireless devices, weather and obstructions like walls. Nevertheless, this modern technology had become common and had gained popularity for homes and business industries due to its practicality. Over time, the products from this technology is continues to decline and stays to improve bit by bit.

The most common wireless local area networking (WLAN) products which conform to 802.11 "Wi-Fi" standards have been developed due to increased demands of multimedia applications such as video and audio streaming. Higher protocols have been produced to support these demands, for instance, higher throughput and lower latencies product has been flourished from 802.11a up to 802.11n.